

---

## **CONTEMPLATIVE PIONEERSHIP**

*Creating and Sustaining Competitiveness and Prominence in Academia and Industry*

By:

John Gambatese, PhD, PE(CA)  
Professor, School of Civil and Construction Engineering  
Oregon State University  
Corvallis, Oregon USA

How do we set ourselves up for success in academia and industry? Planning, preparation, focus, and a willingness to work diligently are basic needs along with many supporting activities and behaviors. Going beyond simple success, long-term competitiveness and distinction are common aspirational goals we also desire, are held to, and strive for. However, creating and sustaining competitiveness and prominence in academia and industry require traits and skills that are often subtle and difficult to measure, yet critically fundamental. Contemplative pioneership characterizes the foundational traits and skills needed. It describes a way of thinking and being that sets us up for eventually achieving sustained competitiveness and distinction in a field of study or practice.

### **WHAT IS CONTEMPLATIVE PIONEERSHIP?**

Contemplative pioneership is intentional and strategic exploration within a field of study or practice with the goal of identifying and fostering the development of new concepts, principles, products, and/or practices. It is founded on curiosity and the desire and need to explore and innovate while being cognizant of the value of doing so in a purposeful and planned manner.

Pioneership on its own represents the state or act of being a pioneer (1, 2, 3). A pioneer can be someone who physically explores a new geographical area, an uncharted planet, or outer space and shares new knowledge about what was found. In other contexts, like academia and industry, a pioneer is a person who takes initiative and action to explore and develop a unique idea or field of study that has not previously been contemplated, investigated, and documented. Pioneership enables humanity to go from no idea or knowledge about a subject to an understanding about the subject that benefits and potentially transforms humankind. It moves “what we know we don’t know” or “what we don’t know we don’t know” about a subject area to “what we know we know” about the subject area.

Contemplative refers to deep thinking and engaging in prolonged reflective and anticipatory thought (4, 5, 6). It includes considering an idea or topic with focused attention, introspection, and devotion. Contemplation, in this context, goes beyond immediate, surface-level knowledge to thorough understanding and competency. When applied to problem solving, contemplation leads to a plan of action. A contemplative person takes time to think and plan. They organize their thoughts and actions to search for understanding, eliminate uncertainty, and give themselves the best opportunity to succeed. Being contemplative means thoroughly thinking about, and taking stock in, what is known and developing educated hypotheses about what is not known.

---

Together, contemplative and pioneership represent endeavoring to explore in a planned, focused, and methodical manner for collective benefit. Importantly, the overall aim of contemplative pioneership is to go from unknown to known. Conceiving new ideas and technologies that have never been considered, identifying and investigating new subject areas that have not been studied, and developing new foundational principles and practices upon which our world can be understood and advanced, are examples of intended outcomes.

Contemplative pioneership begins with wonder and curiosity. Wonder about why the world is as it is, and what else there is beyond our present understanding. Curiosity that is not limited to learning about what we already know, which is simply consumption, but of what we presently do not know. As wonder and curiosity develop and take root, contemplative pioneership then integrates critical thinking. The combination plots a course to attain new knowledge and generates the courage to confidently embark on the journey.

Contemplative pioneership precedes leadership. Pioneers develop new ideas and subject areas, creating knowledge that can then be acted upon, if desired, for further gain. Leaders recognize value in what pioneers discover and motivate others to work together to secure the value. Leadership is the state or act of directing others through influence and guidance to achieve a goal (4, 7, 8). Similar to contemplative pioneership, contemplative leadership brings self-reflection, concentration, and alertness to the leadership role (6). Overall success relies on both pioneership and leadership. The presence of, and need for, constant change drive continual pursuit of competitive distinction through a combination of pioneership and leadership. Leadership helps make the pursuit happen. However, long-term competitive advantage wanes when only leadership exists and new ideas and knowledge are not developed. Pioneership provides the rootstock from which distinction is ultimately created and sustained.

Contemplative pioneership embodies research. Research constitutes systematically investigating a topic with the goal of establishing facts and reaching new conclusions (4, 9, 10). The research process involves: (1) describing existing knowledge and identifying current gaps in the knowledge (i.e., telling a story of what we know and do not know), (2) crafting an argument for what we think might be, (3) executing the argument in an attempt to prove our hypothesis, and then (4) synthesizing the findings into new knowledge (i.e., telling a NEW story of what we know and do not know). Those who exhibit contemplative pioneership perform the same process. In some cases, the research may be exploratory and, just like the pioneers who discovered new lands, the researchers are unsure of what they will find but willing to act. In the end, the research contributions may lead to incremental change or be transformative; both provide valuable progress. In fact, far-reaching and ground-breaking progress often comes from the accumulation of small improvements rather than one monumental advance. Strategically making small contributions over an extended period of time can produce sustained and, eventually, substantial success.

Contemplative pioneership incorporates creativity and supports innovation. Creativity can be described as the state or act of generating ideas (4, 11, 12). When being creative, people come up with something new, solve a problem in a unique way, make unique connections between ostensibly dissimilar ideas, or conceive and produce a myriad of other distinctive products. Creativity is often, by interest and/or need, a driver of contemplative pioneership. Creativity also sustains contemplative pioneership to overcome barriers. Once new ideas are generated, innovation is the process of translating the ideas into something of value (4, 13, 14).

---

Innovation can consist of creating new products, services, processes, and frameworks that aid in accomplishing a task, increasing productivity, or improving quality. The goal of innovation is often to produce a tangible outcome that provides beneficial improvements. Contemplative pioneership blends critical thinking together with creativity and innovation.

Reflecting on one's actions and thinking to continuously adapt and learn, which are the essence of reflective practice (15) and metacognition (16, 17), may be practiced by those who exhibit contemplative pioneership, but are not its equal. Contemplative pioneership goes beyond introspection, self-improvement, and simply synthesizing information. It encapsulates a disciplined rhythm that weaves reflection, ideas, ethics, and transformative progress in a field of study or practice. It involves thinking critically through one's own work and that of others, using rigorous methods and techniques to ensure high levels of rigor and integrity. As a result, contemplative pioneership keeps research and development both grounded and progressive. In science, Johannes Kepler, Isaac Newton, Louis Pasteur, and Marie Curie are examples of people who displayed contemplative pioneership. Andrew Carnegie, Henry Ford, and Thomas Edison are examples of people who exhibited the same mindset in industrial pursuits. These pioneers paused to question assumptions through reflection and critical thinking and then transformed their fields of science or practice through innovative ideas and focused action.

## **MOTIVATION FOR CONTEMPLATIVE PIONEERSHIP**

Contemplative pioneership goes beyond simply exploration to include creation, ingenuity, and understanding rather than simple explanation. It supports paradigm shifts and revolutions in science, technology, and industry (18). The values intrinsic to contemplative pioneership are the excitement and anticipation created when something new is envisioned and developed, and the potential promise it brings. Individual achievements that may be small and seem initially insignificant but have the potential to move an entire field of study forward magnify the exhilaration and motivation. The freedom to dream, explore, and innovate is the hallmark of contemplative pioneership. A life purposefully filled with challenge, change, and curiosity brings happiness and fulfillment (19). These values are never-endingly attractive and, ultimately, sustain long-term growth and distinction.

Contemplative pioneership may be undertaken individually or cooperatively, commonly for the benefit of a group or organization, with individual growth and advancement as fortunate byproducts. At a personal level, contemplative pioneership enables an individual to develop and grow in a desired direction. Those who find success in research within academic and industrial settings often exhibit an elevated level of contemplative pioneership. Their success stems from the generation and pursuit of unique ideas, thoughtful planning, self-initiation, measured and ethical risk taking, and quality outputs, all which are consistent with design thinking (20) and underpin sustained competitiveness. They are often referred to as forward thinkers and, understandably, pioneers. Awards like the MacArthur Fellowship (21) honor their creativity, accomplishments, and potential to contribute more advances in the future.

For a company or organization, contemplative pioneership enables strategic change that creates and drives sustained competitive advantage. Applying knowledge with deep understanding, ethical grounding, and long-term thinking rather than just accumulating endless

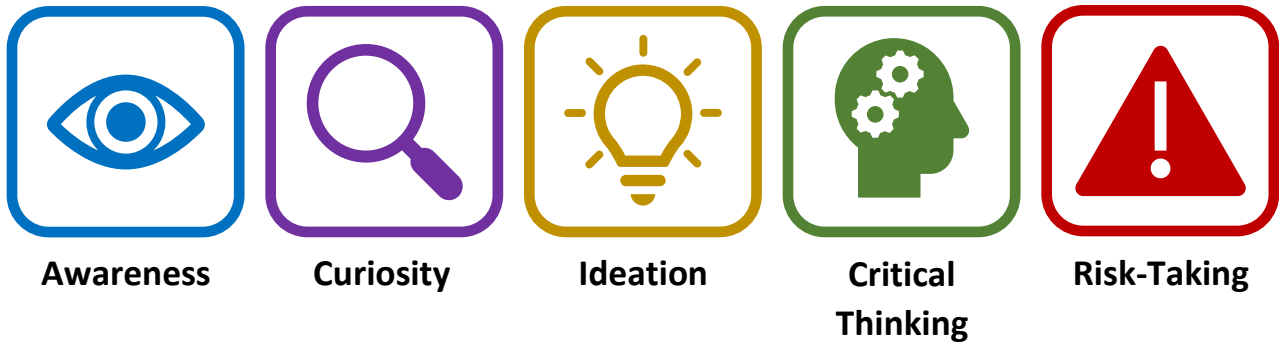
---

facts, information, assets, and accolades are characteristics of the Wisdom Economy (22, 23). Contemplative pioneership feeds the Wisdom Economy by promoting presence, discernment, emotional clarity, and ethical coherence (23). It is supported by an organizational culture that encourages creativity, innovation, and long-range thinking, and tolerates short-term setbacks and foreseen risks. That is, it promotes an approach where long-term problems are not overlooked or discounted in favor of short-term gratification. Companies and organizations that emphasize and put resources toward the attributes of contemplative pioneership experience lasting competitiveness resulting from innovation, being “ahead of the curve,” improved planning and risk management, and employees who are engaged and excited about their jobs (24, 25). These companies and organizations may not be the largest, perhaps by choice, but are highly regarded, profitable in the long run, and justifiably referred to as pioneering.

Those who engage in contemplative pioneership develop and exhibit a sense of calmness and confidence. They are clear in their values and intentions and maintain that clarity through challenges and distractions. They are proficient at sustained attention, a trait that supports intellectual staying power when faced with setbacks and when the novelty of an idea fades (26). Their movements may appear slow but are efficient and ultimately swift due to increased certainty (27). Their discipline and long-term thinking eliminate the need for artificially generating energy and motivation to focus (27). The internal clarity that they possess shapes their external actions. As a result, they weather the ups and downs of changing conditions, overcome taxing external influences, and avert debilitating internal questioning and feelings of incompetence. Notably, they embrace setbacks and discomfort, learning from experiences and how they can grow to strengthen their future (28). In other words, they are forward thinkers who remember and leverage past experiences, while not letting the past stymie their future. The result is full realization of one’s potential leading to the highest level of effectiveness and achieving real results (29). Whether at the individual or corporate level, the tendencies and temperament created by contemplative pioneership are subtle, yet motivationally attractive.

## **ELEMENTS OF CONTEMPLATIVE PIONEERSHIP**

Those who display and practice contemplative pioneership possess certain personal qualities and abilities in the broad areas of: (1) awareness, (2) curiosity, (3) ideation, (4) critical thinking, and (5) risk-taking. All are elements of contemplative pioneership and, as a result, all are at the core of creating and sustaining competitiveness and prominence. The elements are both essential and everlasting. For long-lasting competitive advantage and immutable distinction, the elements are, as a whole and individually, not optional, disposable, or subcontractable. They are independent yet commonly integrated in their implementation. The traits intrinsic to these foundational elements enable contemplative pioneership. For some, the traits are instinctive, and the elements may be practiced intuitively. However, the elements can be learned and developed and should be practiced regularly to maintain their presence. Scientific revolutions and revivals are rarely intentionally planned and executed with precision; ideas appear sporadically and meaningful change occurs haphazardly. When rooted in and stabilized by the elements, pioneers stand ready to realize the potential of new ideas, nourish the investigative process, and initiate the innovation and change.



**Awareness:** Awareness represents the state of being conscious of one's conditions and surroundings in the present based on available information and learned experience. In short, it integrates perception with knowledge of a situation or subject. Awareness enables us to absorb and interpret information which can then be transformed into new knowledge through exploration and research. Future progress and change cannot take place and be recognized without initially being aware of the present state of knowledge and existence. Research and development are not carried out in a vacuum; internal and external awareness, as well as awareness of future possibilities and desired goals, are needed. There is also a time aspect of awareness. Awareness requires being present and paying attention, all the while having an open mind to what is being heard and seen. Accordingly, awareness initiates and sustains contemplative pioneership.

**Curiosity:** Curiosity represents a desire to know and understand. It causes a person to ask questions and explore with the longing to learn. Consequently, those who are curious grow intellectually. Acting on their curiosity, they eventually innovate, advance knowledge, solve problems, and establish meaningful change. Being curious stems from being aware coupled with an openness to learn. A questioning attitude founded on causal analysis is an indicator of thoughtful curiosity. In addition, effective curiosity requires an unassuming approach that embraces being humble and open-minded. Curiosity is a considerable aspect of the underlying nature of those who exhibit contemplative pioneership.

**Ideation:** Ideation is the process of generating and developing ideas. Ideation represents creativity and imagination working together to translate curiosity into new ideas that, with focused action, eventually become innovations. Having innovative ideas means starting with many ideas, of which some will likely be proven to be poor or wrong; what one has to learn is which ideas to pursue and which to throw away (30). What abilities and traits support the generation of new ideas? Examples include the ability to make associations between seemingly disparate conditions and concepts, looking at a problem through different lenses, possessing a high level of visual literacy, and taking a wider perspective, all without losing focus on the ultimate goal and objectives. Giving attention to irregularities in data and findings is especially fruitful. Unexpected findings, with additional focused investigation, often spur deeper understanding and innovations. Looking at observable data through new theoretical frameworks and sometimes new instruments leads to shifts from an existing

---

paradigm that contains unknowns and anomalies to a new, more accurate paradigm (18). Having empathy and compassion for others enables exploring through the many lenses of what it means to be human and thus being able to see and interpret our world from multiple points of view. Consequently, affective learning concepts and practices support ideation. Being forward looking and having a positive attitude are also critical traits that promote beneficial ideation. Ideation fuels contemplative pioneership by providing hypotheses to test and a promise that something new will be observed or created.

**Critical Thinking:** Critical thinking is the formal and objective process of analysis with the goal of developing informed and well-reasoned conclusions and opinions. Reasoning ability founded on principles of logic is intrinsic to critical thinking. When applied to research, critical thinking is notably based on sound evidence and proof and utilizes the concepts of analogy and causation. Contemplative pioneership, with its planned and methodical manner, relies heavily on critical thinking. Critical thinking translates the “what ifs” from ideation into “why nots” that eventually lead to action. Moreover, collaboration supported by nourishing and investigative discourse amongst colleagues helps to produce objective critical thinking at a high level. Therefore, competency and confidence in supportive argumentation and debate are also important traits that promote contemplative pioneership.

**Risk-Taking:** Part of being a pioneer is a willingness to risk putting oneself forth, trying something new, and taking a different approach or path. Risk-taking involves taking an action in the presence of uncertainty and amidst the possibility of a positive or negative outcome. Those who take risks venture forth when others remain, much like the many historical pioneers who left their homes to explore new lands. Exploring typically requires leaving something behind. That something could be theories, concepts, and practices developed through prior research and development. Therefore, critical thinking and having faith and patience are essential traits along with a willingness to improvise when needed. In fact, having faith creates feelings of comfort and certainty and that one is not taking a risk. These traits provide motivation even when there are just sounds in the distance for directional guidance, no maps to get there, only essential provisions available, and a chance of not returning in the same condition or returning at all. Motivation through measured confidence, innovative approaches, and a penchant to take on a challenge is an inherent attribute of risk-takers. It requires trusting oneself when others cast doubt, a trait that leads to growth, maturity, and accomplishment (31).

Being willing to work diligently and to persevere when pressed are immeasurably important parts of risk-taking. Opportunities are often missed because they are “dressed in overalls and look like work” (32). That is, work should not be avoided, but welcomed as a way to grow, contribute, prosper, and develop future prospects. Furthermore, working hard and showing grit contribute more to success than talent alone (33). For sustained performance over an extended period, work and the associated cognitive load must be managed effectively; excessive mental workload can impair concentration, slow down task execution, and increase the likelihood of errors (34). Successful risk-taking requires having a balanced and objective understanding of the risk in relation to the potential reward. As a result, decision-making must be grounded in reality and ethics, shaped by unbiased and authentic motivation, and based on a healthy understanding of the work landscape and available paths. A thorough grasp of the extent of ambiguity, uncertainty, and ignorance present in an argument or condition moderates the potential lack of confidence associated with the risk. When negative outcomes occur, those

---

who exhibit effective contemplative pioneership learn from failures, innovate, and move on. Continuous learning through reflective practice, coupled with self-management and self-discipline, is an integral component of progress and innovation.

## **PREREQUISITES FOR CONTEMPLATIVE PIONEERSHIP**

Contemplative pioneership is not sufficient on its own to generate competitiveness and prominence. Knowledge in the field of study or practice being explored is a prerequisite. Detailed knowledge about the subject area, applicable theories and concepts, standard practices, and available tools and technologies is needed to confidently explore a topic and generate meaningful results. Without detailed knowledge about the subject area, contemplative pioneership ends at curiosity; developing and then investigating new ideas with confidence and that have merit are inhibited when the needed knowledge is lacking. This knowledge may be learned through formal education, training, personal experience, or practice, and ideally all four to gain a complete understanding of the subject matter. Comprehensive literature reviews and field studies enable pioneers to gain present knowledge. Regular reading of newly published literature in a subject area is required to stay up to date and maintain competency. Staying abreast of new trends and emerging trends is important. It is not necessary to adopt or incorporate them immediately but at least stay aware of developments both within one's own field and more broadly. Connecting the dots that spark a new idea may occur immediately or sometime in the future. Healthy collaboration within a network of colleagues also aids in staying knowledgeable in a field of study or practice and in developing and shaping ideas.

Taking action to explore and develop a topic also requires resources. The presence of sufficient resources enables contemplative pioneership to take place. Money, time, people, materials, and equipment are examples of resources commonly required. In some cases, especially early on when initial ideas are being developed and proposed, all that is needed may be time, a bit of money, clear thinking, and motivation. Resource needs commonly grow as research expands initial idea development to experimentation and ultimately creation of the deliverable or product. The necessary resources should be present, and those involved should have the ability, willingness, and authority to utilize and manage the resources and perform their work in the best possible manner. Importantly, the overarching organizational culture and system should support use of the resources in an efficient, effective, and motivating manner. For that reason, the culture needs to be founded on trust and autonomy.

Ingrained in a supportive culture is devotion to work. Work leads to progress and as is often stated, to work or struggle is to live. The experience and humility associated with working and having to "make and bring your own lunch" establish a mindset connected to reality and respect, and as a result, an appreciation for progress gained, even if it is small and uncelebrated. Attaining success and acclaim associated with contemplative pioneership requires focused labor, perseverance, and self-initiative, which in the end provide a deeper understanding of, and appreciation for, life and our world. It requires self-motivation; work without needing to be told to do so. It flourishes with selflessness and a positive outlook; work without first requiring compensation or expecting commendation. Motivation for

---

contemplative pioneership oftentimes comes from a more altruistic perspective based on personal experience, desires, and needs rather than external forces.

## ACKNOWLEDGEMENT

Thoughtful input and advice on contemplative pioneership and this document were provided by Mohammed Azeez, Dan Cox, Vineeth Dharmapalan, Matthew Hallowell, Ziyu Jin, Ali Karakhan, Ding Liu, Joseph Louis, Craig Martin, Chukwuma Nnaji, Chris Parrish, Sathyanarayanan Rajendran, Fred Sherratt, T. Michael Toole, and Nicholas Tymvios. All are colleagues and friends who exhibit contemplative pioneership. Their insights and contributions helped to clarify the concept and polish the document, and I am immensely grateful for their assistance and advice.

## REFERENCES

1. OED (2025). Oxford English Dictionary, <https://www.oed.com/>, Sept. 2025.
2. Wiktionary (2025). Wiktionary, <https://www.wiktionary.org/>, Sept. 2025.
3. Urban Dictionary (2025). Urban Dictionary, <https://www.urbandictionary.com/>, Sept. 2025.
4. Merriam-Webster (2025). Merriam-Webster's Unabridged Dictionary, <https://www.merriam-webster.com/>, Sept. 2025.
5. Cambridge (2025). Cambridge English Dictionary, <https://dictionary.cambridge.org/us/dictionary/english/>, Sept. 2025.
6. CLD (2025). "What are Contemplative Practices." Contemplative Leadership Development, <https://contemplative-ld.squarespace.com/whatiscontemplativeleadership>, Oct. 20, 2025.
7. McKinsey (2024). "What is Leadership?" McKinsey & Company, <https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-is-leadership>, Sept. 10, 2024.
8. CCL (2025). "What is Leadership?" Center for Creative Leadership, <https://www.ccl.org/>, March 15, 2025.
9. ORI (2025). "Module 1: Introduction: What is Research?" The Office of Research Integrity (ORI), U.S. Department of Health & Human Services, Rockville, MD, <https://ori.hhs.gov/module-1-introduction-what-research>, Sept. 2025.
10. NCSES (2025). "Definitions of Research and Development: An Annotated Compilation of Official Sources." National Center for Science and Engineering Statistics (NCSES), National Science Foundation (NSF), Publication ID: NCSES 25-215, April 28, 2025, <https://nces.nsf.gov/pubs/nces25215>.
11. Psychology Today (2025). "Creativity." Psychology Today, <https://www.psychologytoday.com/us/basics/creativity>, Sept. 2025.
12. APA (2025). "Creativity." American Psychological Association (APA), <https://www.apa.org/topics/creativity>, Sept. 14, 2025.
13. Kochetkov, D.M. (2023). "Innovation: A state-of-the-art review and typology." *International Journal of Innovation Studies* (IJIS), ScienceDirect, 7(4), 263-272, Dec. 2023, <https://doi.org/10.1016/j.ijis.2023.05.004>.

- 
14. McKinsey (2022). "What is Innovation?" McKinsey & Company, <https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-is-innovation>, Aug. 17, 2022.
  15. Cambridge (2025). "Getting Started with Reflective Practice." Cambridge International Education Teaching and Learning Team. <https://www.cambridge-community.org.uk/professional-development/gswrp/index.html>, Oct. 2025.
  16. Stanton, J.D., Sebesta, A.J., and Dunlosky, J. (2021). "Fostering Metacognition to Support Student Learning and Performance." *CBE Life Sciences Education*, PMC PubMed Central, 20(2), <https://www.doi.org/10.1187/cbe.20-12-0289>.
  17. Wendt, T. (2024). "What is Metacognition." *Health & Parenting Guide*, WebMD, July 27, 2024, <https://www.webmd.com/parenting/what-is-metacognition>.
  18. Kuhn, T.S. (2012). "The Structure of Scientific Revolutions: 50<sup>th</sup> Anniversary Edition." University of Chicago Press.
  19. Dooley, K. (2025). "Psychologists introduce third path to 'good life' – one full of curiosity and challenge." *Psychology & Psychiatry*, Medical Xpress, July 18, 2025, <https://medicalxpress.com/psychology-news/>.
  20. Norman, D. (2013). "The Design of Everyday Things," revised and expanded edition. *Basic Books*, New York, NY.
  21. -- (2025). "MacArthur Fellows." MacArthur Foundation, <https://www.macfound.org/programs/awards/fellows/>, Oct. 2025.
  22. JDI (2025). "What Comes After the Knowledge Economy?" Jones-Dilworth, Inc. (JDI), <https://www.jones-dilworth.com/superposition/knowledge-wisdom-economy/>, Oct. 2025.
  23. Michaelsen, N. (2025). "Birth of the Wisdom Economy: Unlocking the Opportunity in Reskilling 1 billion Knowledge Workers in a Post-AI world." *Ecologies of Wisdom*, Substack, June 1, 2024, <https://ecologiesofwisdom.substack.com/p/the-birth-of-the-wisdom-economy>.
  24. Cook, C. (2025). "13 Characteristics of a Successful Business." U.S. Chamber of Commerce, June 23, 2025, <https://www.uschamber.com/co/start/strategy/successful-businesses-common-characteristics>.
  25. de Jong, M., Marston, N., and Roth, E. (2015). "The eight essentials of innovation." McKinsey & Company, Apr. 1, 2015, [https://www.mckinsey.com/capabilities/strategy-and-corporate-finance/our-insights/the-eight-essentials-of-innovation#](https://www.mckinsey.com/capabilities/strategy-and-corporate-finance/our-insights/the-eight-essentials-of-innovation#/)/.
  26. Stone, L.D. (2026). "Sustained Attention is the New Ivy League Advantage." *Forbes*, Jan. 6, 2026, <https://www.forbes.com/sites/lizdoestone/2026/01/06/sustained-attention-is-the-new-ivy-league-advantage/>.
  27. Nixon, N. (2025). "Why slow is the new fast: The business case for moving deliberately." *Fast Company*, Sept. 10, 2025, <https://www.fastcompany.com/91383532/slow-is-the-new-fast-performance-productivity-performance-productivity>.
  28. Brown, L. (2025). "I spent a year studying how successful people think—these 7 lessons changed my life." *The Expert Editor*, Aug. 28, 2025. <https://experteditor.com.au/blog/gen-i-spent-a-year-studying-how-successful-people-think-these-7-lessons-changed-my-life/>.
  29. "Arete." Wikipedia, Oct. 17, 2025, <https://en.wikipedia.org/wiki/Arete>.

- 
30. Pauling, L. (1977). "Linus Pauling, Crusading Scientist." Audio clip produced for NOVA by Robert Richter, WGBH-Boston, Clip ID #1977v.66-ideas, <https://scarc.library.oregonstate.edu/coll/pauling/bond/audio/1977v.66-ideas.html>.
  31. Kipling, R. (c. 1895). "If—" Academy of American Poets, <https://poets.org/poem/if>.
  32. Edison, T.A. (2020). *Thomas Edison Quotes*, Charles Edison Fund, Newark, NJ, <https://www.charlesedisonfund.org/edison-quotes-images>.
  33. Lake, S. (2025). "Hard work beats talent when it comes to success, UPenn psychologist says: 'Effort counts twice'." *Fortune*, Nov. 17, 2025. <https://fortune.com/2025/11/17/hard-work-beats-talent-success-angela-duckworth-upenn/>.
  34. Eltahan, A., Lee, G., and Hamzeh, F. (2025). "From Theory to Construction: Rethinking Task Complexity and Cognitive Load." In *Proceedings of the Joint CSCE Construction Specialty & CRC Conference 2025*, Canadian Society of Civil Engineers (CSCE) and American Society of Civil Engineers (ASCE), Montreal, Quebec, Canada, July 28-31, 2025.